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ABSTRACT

Recent studies refuting the effectiveness of advance organizers in preparing students to comprehend text material have not met the conditions necessary for advance organizers to succeed. According to the assimilation theory, which holds that people learn by chaining what is known to what is to be learned, the following conditions must be met for advance organizers to be effective: (1) the material should be new; (2) it should be able to be conceptualized in a meaningful, assimilative context; (3) advance organizers should either give or isolate this meaningful context; (4) advance organizers should actively force their use by learners; (5) learners do not have prior knowledge of the meaningful assimilative contexts and would not regularly use subsumption in learning new materials; and (6) posttests should measure transfer and long term retention. Prose advance organizers may be either expository or comparative. Graphic organizers, which are visual as well as verbal presentations, appear to have a number of advantages over prose organizers. For example, they have been operationally defined, may be constructed with a relatively simple set of directions, and allow for interaction between students and teachers. Used properly, advance organizers can upgrade students' comprehension of textbook material. (MM)

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DEVELOPING COMPREHENSION SKILLS VIA ADVANCE ORGANIZERS

Research into the effectiveness of advance organizers in enhancing reading comprehension in content area reading is a relatively new frontier in the area of educational research. It has only been since Ausubel opened the flood gate of controversy in 1960 with his report of a study which supported his theory of subsumption through the use of advance organizers, that there have been numerous studies on their effectiveness of advance organizers. The results of these studies have been inconclusive. In fact, several of the more recent studies seem to refute Ausubel's findings as to the usefulness of advance organizers.

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According to Mayer (1979) the results of these negative studies are puzzling since in refuting the effectiveness of advance organizers they also raise some pungent questions about the soundness of the assimilation theory. This theory, which holds that one learns by chaining or connecting what is known to what is to be learned, has been a mainstay of the educational process for centuries.

If one accepts the theory of assimilation then it becomes almost impossible to accept the findings of any study which completely disclaim the usefulness of advance organizers.

Mayer (1979) concludes that such studies are the result of one or two fallacies: 1) the conditions which are necessary for advance organizers to be effective had not been met and/or 2) the organizers had been used in one of the six situations in which advance organizers are destined to fail.

Clark and Bean (1982) state that a preponderance of advance organizer research has been consistently inconsistent and unscientific. Perhaps this can be attributed to the lack of the application of the assimilation theory in the development of the advance organizer models which were used in the various research projects.

The purposes of this paper were: 1) to review studies on the effectiveness of advance organizers on reading comprehension in the content areas, 2) and to review related literature on advance organizers.

It was hypothesized that advance organizers would have a positive effect when used in any of the following situations: 1) in the introduction of poorly organized material, 2) for learners who lack prerequisite knowledge or abilities, and 3) when used on measures which involve the transfer of information.

The theory of assimilation served as an anchor for this study of organizers therefore, it was limited to determing whether the studies which support or refute the effectiveness of organizers met certain predetermined conditions. According to the assimilation theory the following conditions must be met for advance organizers to be effective:

1. Materials should be those with which the reader is totally unacquainted.

2. It must be possible to conceptualize the material in a meaningful, assimilative context.

3. The advance organizer should either give or isolate this meaningful assimilative context.

4. The advance organizer should actively force its utilization by the learner.

5. The learner is one who does not have prior knowledge of the meaningful assimilative context and would not regularly use subsumption in learning new materials.

6. Posttests should measure transfer and long-term retention. (Mayer, 1979, pp. 6-7)

Mayer (1979) noted the situations in which advance organizers were predisposed to fail. Failure happens when:

1. The material used is already organized in such a way that it provides sufficient meaningful assimilative context without the use of advance organizers. For example, in texts in which unknown terms are properly defined and footnotes, or their equivalent, are given to supply prerequisite knowledge, advance organizers would have little or no effect.

2. There is no hierarchical organization of the information. A disconnected list of facts is an example of the kind of information to which advance organizers could not effectively be applied.

3. The advance organizer does not include sufficient data to render it useful in comprehending the material.

4. The advance organizer does not actively force its use in the learning process.

5. The learner has a good deal of prior knowledge and regularly uses this kind of prior knowledge when learning new material.

6. The posttest only measures the simple recall of facts.

"In today's literature on teaching reading, we often meet the term advance organizer. Thomas and Robinson (1982, pp. 59 and 60) writing about improving comprehension reviewed the study of Psychologist David Ausubel (1960), who originated the term. It was reported that Ausubel asked himself, "What happened when students read a 'prestructuring' statement before they read a long passage? To answer the question, he used a controlled study in which one group had the advantage of first reading a short introductory passage (500 words) that "ideationally organized" a longer passage (2500 words). The short statement mobilized relevant concepts already in the learner's mind, served as an anchoring focus for the reception of the new material and made the new material more familiar and meaningful." (pp. 59 and 60) As a result, for many students, the use of advance organizers definitely upgraded student comprehension of principles, facts, and application, and aided retention.

Ausubel observed that few textbooks provide prestructuring statements, and too few teachers provide advance organizers as they assign reading selections.

Definitions of Advance Organizers

Definitions

Advance organizer is "a learning strategy developed by D. Ausubel in which a passage is written to enhance the learning of other material and is presented prior to the other material." (Harris and Hodges, 1981, p. 8).

"The Advance Organizer is usually a short reading selection that precedes the longer selection to be read later and requires a higher level of generality to be applied in order to comprehend the ideas. Structured overviews, another form of an advance organizer, are used to help students relate old information to new information or concepts." (Cheek and Cheek, p. 143).

The advance organizer is "a device that prestructures a longer passage, strengthens background, and makes the new material more familiar and meaningful." (Thomas and Robinson, 1982, p. 269).

As developed by Ausubel, advance organizers are introductory prose passages written at a higher level of generality, abstraction, and inclusiveness than the actual learning material. These devices, "provide ideational scaffolding for the stable incorporation of more differentiated material in the learning passage," and "they increase discriminability between the new material and similar or ostensibly conflicting ideas in cognitive structure."(1968, p. 148).

An advance organizer is a statement used to ready the reader to comprehend a passage to be read. Ausubel (1963), the orginator of this strategy, suggested that its purpose is to relate the materials to be comprehended to the readers' cognitive structure. In other words,

an advance organizer is to call attention to what a reader already knows about the content of a given passage as well as to what is new.

Effectiveness

As Mayer (1979) reports, there have been hundreds of studies of the effects of advance organizers since 1960. The main reason for these efforts is that assimilation theory "is one of the main pillars of the modern psychology of learning and memory." Also, "Assimilation theory is generally taken for granted and it seems that one can not read a textbook on learning and memory without finding a statement to the effect that learning involves connecting new ideas with old knowledge." (p. 5)

One problem, however, is that some of the more recent studies since Ausubel's work have raised considerable doubt in support of advance organizers (Glover, Zimmer, Ronning and Petersen, 1980; Fowler and Lamberg, 1979; and Barnes and Clawson, 1975).

As stated previously, Ausubel (1960) conducted a study to test the hypothesis that the "Learning and retention of unfamiliar but meaningful verbal material can be facilitated by the advance introduction of relevant subsuming concepts (organizers)." This hypothesis was based on the assumption that cognitive structure is hierarchically organized in terms of highly inclusive concepts under which are subsumed less inclusive subconcepts and informational data. "If this organizational principle of progressive differentiation of an internalized sphere of knowledge does in fact prevail, it is reasonable to suppose that new meaningful material becomes incorporated into cognitive structure in so far as it is subsumable under relevant existing concepts. As Blanton (1972) summarizes Ausubel's Theory of Reception Learning, he states,

"In the theory of meaningful verbal learning, a major concept is that new material which is to be learned must be related to the learner's existing cognitive structure. In other words, new subject matter is acquired as unfamiliar knowledge is integrated, or subsumed into the learner's hierarchical cognitive structure. Subsumption, then, is the process of incorporating new subject matter into a larger comprehensive knowledge system." (p. 4)

In order to facilitate the process of acquisition and retention of meaningful material, Ausubel advocates the use of advance organizers:

> . . . the most efficient way of facilitating retention is to introduce appropriate subsumers and make them part of the learning task. The introduced subsumers thus become advance "Organizers" or anchoring foci for the reception of new material. In effect, they provide an introductory overview at the appropriate level of conceptualization (1963, p. 29).

Ausubel goes on to identify three important attributes of advance organizers that support their incorporation into learning materials:

1. Specifically constructed advance organizers based on specific learning materials are an efficient and appropriate way to facilitate the subsumption of subject matter. The deliberate introduction of relevant organizers into the learning cognitive structure is an effective method of manipulating the relevant attributes of cognitive structure in order to maximize the subsumption of more detailed subject matter.
2. Organizers are more effective for learning information data and factual material than for the learning of abstract materials (concepts, principles, and generalizations) because abstractions are inherently hierarchical and contain their own inclusive organizers.

3. The effect of advance organizers will be more obvious if the learning material is structured to proceed from highly inclusive and theoretical subject matter to less inclusive and more specific learning material. Moreover, Ausubel postulates that organizers presented in advance of the learning material will facilitate conceptual integration more effectively than organizers presented concurrently with the learning material. (Blanton, 1972, p. 5)

Blanton (1972) describes two kinds of organizers as defined by Ausubel. "When the learner is to be exposed to unfamiliar material, an expository organizer is used to provide subsumers." (p.5) In familiar material, "a comparative organizer is used to enable the learner to discriminate between new and existing concepts which are different but confusable". (p. 5)

Barron (1972) sees advance organizers as logically compelling, but not without problems. First, he says advance organizers have not been accorded an operational definition. Second, in studying the effects of advance organizers, previous investigators seem to concentrate upon basic rather than applied research. He attempted to deal with the preceding problems by developing an operationally defined advance organizer to meet general conditions specified by Ausubel; and testing the effects of this organizer relative to those of a traditional prose organizer. He addressed the question: Are Ausubel's theoretical assertions regarding the facilitative effects of advance organizers generally applicable? The answer from his study appears to be no.

Barron (1972) introduced graphic organizers under the rubic of structured overviews. They have been defined as "visual and verbal presentations of the key vocabulary in a new learning task in relation to subsuming and/or parallel terms that presumably have previously been incorporated into the learner's cognitive structure." (p. 10)

Ausubel differentiates advance organizers and overviews in this matter. He says overviews are generally written at the same level of abstraction and generality as the materials to be learned. Moreover, overviews seem to accomplish their effects through repetition and emphasizing key words and concepts. Organizers, on the other hand, are written at a higher level of abstraction and generality than the material to be learned, and provide relevant subsuming concepts.

"Graphic organizers have been based upon the same theoretical rationale as Ausubel's prose organizers and may be regarded as a 'special form of advance organizers.'" (Barron, 1972, p. 10)

Contrasting prose organizers with graphic organizers, the latter appears to hold a number of advantages. First, graphic organizers have been operationally defined. They may be constructed by following a relatively simple set of directions:

1. Analyze the vocabulary of the learning task and list all the words that you feel are important for the student to understand.

2. Arrange the list of words until you have a scheme which depicts the interrelationships among the concepts particular to the learning task.

3. Add to the scheme vocabulary terms which you believe are understood by the students in order to depict relationships between the learning task and the discipline as a whole.

4. Evaluate the organizer. Have you clearly depicted major relationships? Can the overview be simplified and still effectively communicate the idea you consider to be crucial?

5. Introduce the students to the learning task by displaying the scheme and informing them why you arranged the terms as you did. Encourage them to contribute as much information as possible.

6. During the course of the learning task, relate new information to the organizer as it seems appropriate. (Barron, 1972, p. 10)

Second, graphic organizers allow for interaction between teacher and student, whereas prose organizers are designed to be read by learners. (Barron, 1972, p. 10)

Richard Mayer's study entitled" Twenty Years of Research on Advance Organizers: Assimilation Theory Is Still the Best Predictor of Results has produced a mass of data, and many conflicting claims. Contrary to earlier conclusions, "Twenty years of research on advance organizers has clearly shown that advance organizers can affect learning, and the conditions under which organizers are most likely to affect learning can be specified." p. 33.

A preponderance of studies has shown that advance organizers are effective in improving reading comprehension of various reader populations. (Snouffner and Thistlethwaite, (1979), Kirkley (1981), Alvermann (1981). Positive results are produced when advance organizers are used under the required conditions and in the appropriate situations.

To help students become more successful in learning the content information they are expected to read, several structured procedures as reading and study techniques have been advocated. Among them are the Directed Reading Activity (DRA), the Directed Learning Activity (DLA), Cloze technique, Deductive teaching, EVOKER, PANORAMA, RAPS, PQRST, PQ4R, REAP, SQRQCQ, SQ3R, Study Guides, and others.

A specific example of a current teaching strategy that recognizes the influence of the reader's background on comprehension is the advance organizer.

As teachers read professional journals and books, and hear presentations on content teaching, it is conceivable that confusion is abundant.

But as stated by Santa and Hayes (1981, p. 2), "Comprehension is an idea whose time has come." Teachers, psychologists, and reading educators are concerned about it. " . . . There seems to be uncanny convergence toward issues of prose comprehension across many disciplines. Traditional linguists, sociolinguists, speech-art theorists, psychologists, computer scientists, and reading educators seem to be focusing their research efforts along a continuum that is bounded by the structure of text on one end and the structure of knowledge in the human mind at the other." Even though there are communication differences between these groups of scholars, "they all seem to be concerned with the same problem: the relationship between what we know and how we understand when we read." (Santa and Hayes, 1981, p. 3)

The point of view which was stressed throughout this paper was that you can upgrade your students' reading comprehension in any classroom where reading is required. You can do this "as you make assignments, as you select materials, as you help students master a textbook chapter, and as you formulate questions on their reading selections." (Thomas and Robinson, 1982, p. 49)

"There is a growing movement toward not only presenting but also organizing major concepts to be read in advance of the reading." (Thomas and Robinson, 1982, p. 16). Clarification of terms in relationship to one another acts as a useful structure to guide the reading.

BIBLIOGRAPHY

Ausubel, D. P. Educational Psychology: A Cognitive View. New York: Holt, Rinehart, and Winston, 1968.

Ausubel, D.P. "The Use of Advance Organizers in the Learning and Retention of Meaningful Verbal Material," Journal of Psychology. 51 (1960), 267-72.

Ausubel, D. P. The Psychology of Meaningful Verbal Learning. New York: Grune and Stratton, 1963.

Barnes, D. R. and E. U. Clawson. "Do Advance Organizers Facilitate Learning?" Review of Educational Research 45 (1975), 637-659.

Barron, Richard F. "The Effects of Advance Organizers and Grade Level Upon the Reception Learning and Retention of General Science Content," Investigations Relating to Mature Reading Twenty-First Yearbook of the National Reading Conference, edited by Frank Greene. Milwaukee: The National Reading Conference, 1972.

Blanton, B. Elgit. "Reception Learning and Advanced Organizers: Implications for Reading Research," Investigations Relating to Mature Reading Twenty-First Yearbook of the National Reading Conference, edited by Frank Greene. Milwaukee: The National Reading Conference, 1972.

Cheek, Earl H., Jr. and Martha Cheek. Reading Instruction through Content Teaching. Columbus: Charles E. Merrill, 1983.

Clark, Charles H. and Thomas W. Bean. "Improving Advance Organizer Research: Persistent Problems and Future Directions," Reading World. 22 (October 1982), 2-10.

Fowler, Elaine D. and Walter J. Lamberg. "Effects on Pre-Questions on Oral Reading by Elementary Students." Reading Improvement. 16 (Spring 1979), 71-74.

Glover, John A., John Zimmer, Royce R. Ronning and Chris H. Petersen. "Nobody Knows How to Remember that Prose." Journal of Educational Research 73 (July - August 1980), 340-43.

Harris, Theodore L. and Richard Hodges. A Dictionary of Reading and Reading Related Terms. Newark, Delaware: International Reading Association, 1981.

Langer, Judith A. "Facilitating Text Processing: The Elaboration of Prior Knowledge," ERIC Document ED 188171, November, 1980.

Mayer, Richard E. "Twenty Years of Research on Advance Organizers: Assimilation Theory is Still the Best Predictorof Results," Instructional Science. 8 (April 1979), 33-67.

Santa, Carol M. and Bernard L. Hayes (Editors). Children's Prose Comprehension Research and Practice. Newark, Delaware: International Reading Association, 1981.

Snouffer, Nancy K. and Linda L. Thistlethwaite. "The Effects of the Structured Overview and Vocabulary Pre-Teaching upon Comprehension Levels of College Freshmen Reading Physical Science and History Materials." Paper presented at the Annual Meeting of the National Reading Conference, San Antonio, Texas, November, 1979.

Thomas, Ellen L. and H. Alan Robinson. Improving Reading in Every Class. A Sourcybook for Teachers, Third Edition. Boston: Allyn and Bacon, Inc., 1982.